UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,078	04/12/2005	Kenneth M. Gainey	27-008-TN/WF02-04	2571

23400 7590 06/07/2007

POSZ LAW GROUP, PLC
12040 SOUTH LAKES DRIVE
SUITE 101
RESTON, VA 20191

EXAMINER	
WEISSGERBER, DANIEL J	
ART UNIT	**PAPER NUMBER**
2618	

MAIL DATE	DELIVERY MODE
06/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,078	GAINEY ET AL.	
	Examiner	Art Unit	
	Daniel Weissgerber	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :1/16/2007,11/21/2006,1/05/2006,4/12/2005.

DETAILED ACTION

1. Claims 1-39 are pending.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 1/16/2007, 11/21/2006, 1/5/2006, and 4/12/2005 have been considered by the examiner.

Claim Objections

3. Claim 14 is objected to because of the following informalities:

Claim 14, which depends on claim 11 does not provide proper antecedent basis for "the criteria". It appears claim 14 was intended to depend on claim 12. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 4-14, 15-17, 22-23, 30-35, and 39 rejected under 35 U.S.C. 102(e) as being anticipated by Leslie et al. (US 6,404,775), hereinafter Leslie.

Regarding apparatus claims 1, 11, and 39, Leslie teaches a frequency translating repeater (Col 4; 42-51) for use in a time division duplexing communication system, the frequency translating repeater comprising: at least two receivers (Col 9; 65 – Col 10; 16,

Forward Translation means, "receiver" 134) capable of receiving transmissions on at least first and second frequency channels (Col 9; 65 – Col 10; 16, See 800 Mhz-band and 1.9 Ghz-band); at least one transmitter capable of transmitting on the first frequency channel (Col 9; 65 – Col 10; 16, See reverse translation means, "transmitter" 134); at least one transmitter capable of transmitting on the second frequency channel (Col 9; 65 – Col 10; 16, See reverse translation means, "transmitter" 134); a detector circuit configured to detect if a signal is present (Col 11; 9-26 See "RSSI detector 342 may be used... indicating that the channel is active) on one of two frequency channels associated with the frequency translating repeater (Col 11; 9-26 See forward 800 Mhz and Col 11; 49+ See 1.9 Ghz) and for detecting a receive power level of the signal (Col 11; 9-26 See RSSI detector 342) ; a frequency translator configured to change a frequency channel associated with the signal from an initial one of the first and second frequency channels to a subsequent one of the first and second frequency channels (Col 4; 42-51); a delay circuit configured to add a delay to the signal to compensate for a signal detection interval and a transmitter configuration interval (Col 4; 64 - Col 5; 1 and Col 14; 5-8); a gain control circuit configured to adjust a gain value of the signal at least in part based on the received detected signal power detected by the detector circuit (Col 11; 9-26 See "The RSSI detector 342... produces a responsive AGC signal" and Col); a microprocessor capable of configuring the first and second frequency channels based on pre-determined parameters stored therein (Col 14; 22-37 See "programmable microprocessors"), wherein configuration of a specific frequency for at least one of the first and second frequency channels is based on the pre-determined

parameters, and the pre-determined parameters include at least one of the following: regulatory transmitter power limitations, regulatory out-of-band emissions limitations, and frequency separation between the first and second frequency channels (Col 10; 36-49 See "government regulations...operating frequencies").

As to claim 2, as applied to claim 1 above, Leslie teaches the delay circuit includes an analog storage device (Col 19; 42-60 See Buffers 546 and 548).

As to claim 4, as applied to claim 1 above, Leslie teaches the detector circuit includes a processor (Col 14; 22-37 See "programmable microprocessors")

As to claim 5, as applied to claim 4 above, Leslie teaches the detector circuit further includes an analog detection circuit (Col 11, 9-26).

As to claim 6, as applied to claim 1 above, Leslie teaches a gain control circuit having one of a gain value and an attenuation value associated therewith (Col 11; 9-26).

As to claim 7, as applied to claim 6 above, Leslie teaches the detector is further for detecting a received signal strength of the signal, and the gain control circuit is further for using the received signal strength of the signal to adjust a gain value of the signal (Col 11; 9-26).

As to claim 8, as applied to claim 7 above, Leslie teaches the gain control circuit is further for controlling at least one of the gain value and the attenuation value based on a predetermined criteria to achieve a specific signal transmit output power (Col 11; 9-26).

As to claim 9, as applied to claim 8 above, Leslie teaches the predetermined criteria is for modifying the specific signal transmit output power and includes at least

one of the following: frequency separation between a receive frequency and a transmit frequency, a regulatory rule, a temperature, a received power level, a transmit power level, and a detected interference level (Col 11; 9-26 see "maintain the IF signal at normal levels" and Col 10; 36-49 See Government regulations).

As to claim 10, as applied to claim 8 above, Leslie teaches the processor further includes a memory and wherein the predetermined criteria are stored in the memory (Col 19; 28-41 See "microprocessor with appropriate support hardware", i.e., a memory).

As to claim 12, as applied to claim 11 above, Leslie teaches the gain control circuit is further configured to adjust the gain value based at least in part on criteria including which of the one of the two frequency channels the signal is received on, and which of the other of the two frequency channels is changed to (Col 10; 58 – Col 11; 26).

As to claim 13, as applied to claim 12 above, Leslie teaches the criteria further includes at least one of a regulatory rule for transmission, an operating temperature, and frequency separation between receive and transmit frequencies (Col 10; 36-49).

As to claim 14, as applied to claim 11 above, Leslie teaches the criteria further includes a distance between a receive frequency and a transmit frequency, and wherein the automatic gain control circuit is further configured to apply more filtering to the signal based on the distance (Col 11, 1-8).

Regarding Claim 15, Leslie teaches a frequency translating repeater (Col 4; 42-51) for use in a time division duplexing (TDD) radio protocol system, the frequency

translating repeater comprising: a detector circuit configured to detect if a signal is present (Col 11; 9-26 See "RSSI detector 342 may be used...indicating that the channel is active) on one of two frequency channels associated with the frequency translating repeater (Col 11; 9-26 See forward 800 Mhz and Col 11; 49+ See 1.9 Ghz); a frequency converter configured to convert the signal from a radio frequency (RF) signal to an intermediate frequency (IF) signal (Col 10; 17-35 See output of mixer 158 at a predetermined IF); a frequency translator configured to change a frequency channel associated with the IF signal from the one of the two frequency channels to an other of the two frequency channels (Col 23; 41-60); a delay circuit configured to add a delay to the IF signal to compensate for a signal detection interval and a transmitter configuration interval (Col 23; 1-25 See buffer 548, through which the IF signal is passed); and a gain control circuit configured to adjust a gain value of the IF signal (Col 11; 9-26 See "control the gain", "IF signal").

As to claim 16, as applied to claim 15 above, Leslie teaches the gain control circuit is further configured to adjust the gain value of the IF signal at least in part based on a received detected signal power detected by the detector circuit (Col 11; 9-26).

As to claim 17, as applied to claim 15 above, Leslie teaches the detector circuit and the gain control circuit are located respectively on a first and a second signal path (Col 10; 58 – Col 11; 8 and Col 12; 12-30).

The method claims 22-23 correspond to apparatus claims 1-2 and are rejected on the same basis as claims 1-2.

The method claim 30 corresponds to apparatus claim 11 and is rejected on the same basis as claim 11.

As to claim 31, as applied to claim 30 above, Leslie teaches the adjusting the gain value is based on a criteria including which of the one of the two frequency channels the signal is received on, and which of the other of the two frequency channels is changed to (Col 11; 9-26).

The method claim 32 corresponds to apparatus claim 13 and is rejected on the same basis as claim 13.

As to claim 33, as applied to claim 31 above, Leslie teaches the criteria further includes frequency separation between a receive frequency and a transmit frequency (Col 9; 1-8).

The method claim 34 corresponds to apparatus claim 15 and is rejected on the same basis as claim 15.

As to claim 35, as applied to claim 34 above, Leslie teaches the detecting and the adjusting are performed respectively on a first and a second signal path (Col 10; 58 – Col 11; 8 and Col 12; 12-30).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3, 18-21, 24-25, 26-29, 33, 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leslie in view of Zhang (US 6,285,863), hereinafter Zhang.

As to claim 3, as applied to claim 1 above, Leslie fails to teach the delay circuit includes at least one surface acoustic wave filter configured for one or more of: analog signal storage and channel selection.

However, Zhang in an analogous art teaches a surface acoustic wave (SAW) filter configured for channel selection (Col 1; 51-54).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the frequency-translating repeater of Leslie with the SAW filter of Zhang. The combination would have been obvious because SAW filters allow for a signal to be delayed and select a desired frequency.

As to claim 18, as applied to claim 17 above, Leslie fails to teach the detector circuit includes a logarithmic amplifier and wherein the output of the logarithmic amplifier is coupled to the gain control circuit for control thereof.

However, Zhang in an analogous art teaches a logarithmic amplifier connected to a gain control circuit (Col 2; 1-12).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the frequency-translating repeater of Leslie with the logarithmic amplifier of Zhang. The combination would have been obvious because logarithmic amplifiers can operate as power sensing devices.

As to claim 19, as applied to claim 18 above, Leslie further teaches the detector circuit and the automatic gain control circuit each have different bandwidths (Col 11; 1-26).

As to claim 20, as applied to claim 19 above, Leslie further teaches the automatic gain control circuit includes a processor and a memory storing a predetermined criteria and wherein the processor is configured to use the predetermined criteria to establish an offset gain value of the IF signal, resulting at least in part in a transmitter target output power independent of the detected receive power of the signal as detected by the detector circuit (Col 14; 22-37 and Col 11; 9-26).

As to claim 21, as applied to claim 20 above, Leslie further teaches the processor is further configured to: convert the output of the logarithmic amplifier to a digital signal; and establish the gain value of the IF signal using the digital signal (Col 11; 9-26).

Claim 24, as applied to claim 22 above, recites substantially the same limitations of claim 3 and is rejected by the same reasoning as above.

Claim 25, as applied to claim 24 above, recites substantially the same limitations of claim 5 and is rejected by the same reasoning as above.

As to claim 26, as applied to claim 21 above, Leslie further teaches setting a gain associated with the signal (Col 11; 9-26).

As to claim 27, as applied to claim 26 above, Leslie further teaches the setting the gain further includes setting the gain in part based on a predetermined criteria (Col 10; 58- Col 11; 8).

As to claim 28, as applied to claim 27 above, Leslie further teaches the predetermined criteria includes at least one of the following: a distance between a receive frequency and a transmit frequency, a regulatory rule, a temperature, a received power level, a transmit power level, and a detected interference level (Col 10, 36-49).

As to claim 29, as applied to claim 28 above, Leslie further teaches storing the predetermined criteria in a memory (Col 19; 28-41).

Claim 36, as applied to claim 35 above, recites substantially the same limitations of claim 18 and is rejected by the same reasoning as above.

As to claim 37, as applied to claim 36 above, Leslie further teaches using a predetermined criteria for the adjusting of the gain value of the IF signal (Col 11; 9-26).

Claim 38, as applied to claim 19 above, recites substantially the same limitations as claim 21 and is rejected by the same reasoning as above.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Weissgerber whose telephone number is 571-270-1398. The examiner can normally be reached on MON-FRI 7:00-4:30 EST Alternating FRI off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Weissgerber
Examiner

NAY MAUNG
SUPERVISORY PATENT EXAMINER